PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Donald K. Wright et al.

Serial No.: 10/039,527
Filing Date: November 7, 2001

Examiners: Piazza Corcoran; Gladys Josefina
Art Group: 1733
Atty. Docket No.: 21276.01.9053
Confirmation No. 8833

Title: **APPARATUS AND METHOD FOR MANUFACTURING RECLOSABLE BAGS UTILIZING ZIPPER MATERIAL**

Commissioner for Patents
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Carla Phillips

RENEWED PETITION FOR MAKING PRIORITY CLAIM UNDER CFR §1.78(a)(2)

Dear Sir:

Applicants filed a Petition for making a claim of priority in the above listed application under CFR §1.78(a)(2) on September 24, 2004. The Office of Petitions issued a Decision on Petition, dated January 14, 2005, in which the Office of Petitions dismissed Applicants' Petition for not complying with CFR §§ 1.121, 1.52 or 1.4(c) and CFR § 1.78(a)(2)(i). Specifically, the Office of Petitions dismissed Applicants' Petition under CFR §§ 1.121, 1.52 or 1.4(c), because Applicants' did not provide separate papers from the Petition papers when amending the specification of the instant Application to reflect the claims of priority. Also, the Petition Office dismissed Applicants' Petition under CFR §1.78(a)(2)(i), because Applicants did not amend the instant Application such that the specification thereof contains the relationship between the instant Application and the parent Application from which Applicants claim priority.

Accordingly, as suggested by the Patent Office's Decision on Petition, Applicants are filing this renewed Petition for a claim of priority under CFR §1.78(a)(2). Additionally,

Applicants have attached herewith separate amendment papers to comply with the requirements of CFR §§ 1.121, 1.52 or 1.4(c). Therefore, Applicants respectfully request that this renewed Petition be granted.

Renewed Petition for Making Claim of Priority

Applicants submit and respectfully request the acceptance of Applicants' renewed Petition, under CFR §1.78(a)(2)(ii), for the extension of the time period for making a claim for the benefit of an earlier filing date. Specifically, Applicants request that the instant Application be granted the benefit of the filing date of the earlier filed U.S. Patent Application No. 09/415,696, filed October 12, 1999, as a continuation in part application. In support of Applicants' request, Applicants have included the following required information as set out in CFR §1.78(a)(3):

(1) As Exhibit 1, Applicants have provided a copy of the now cross-referenced earlier filed Application No. 09/415,696;

(2) The surcharge set forth in § 1.17(t); and

(3) A statement provided below that the entire delay between the date the claim was due under paragraph (a)(2)(ii) of this section, or March 7, 2002, and the date the original Petition for claiming priority claim in the instant Application was filed, or September 24, 2004, is unintentional.

Statement Of Unintentional Delay

I, Robert S. Beiser, Applicants' attorney, am the sole Attorney of Record for the instant Application. On November 7, 2001, I filed such Application with the Patent and Trademark Office. Since the filing date, I have been, and continue to be, responsible for the prosecution of the Application. As the sole Attorney of Record, I hereby attest that the entire delay, between the date the claim of priority was due under §1.78(a)(2)(ii), or March 7, 2002, and the date the original Petition for claiming priority was filed, or September 24, 2004, has been a delay that was entirely unintentional. By signing below, I further attest that I have made such statements based on personal knowledge of the facts surrounding the abandonment.

Conclusion

Applicants, through their attorney representative, submit that Applicants are responsible for the unintentional delay in the filing of a claim for the benefit of an earlier filing date beyond the date the claim was due as defined under paragraph (a)(2)(ii) of this section. Applicants respectfully request the acceptance of the instant renewed Petition and Applicants' supporting information, as required by CFR §1.78(a)(3), and respectfully request that the instant Application be granted the benefit of earlier filing date of the cross-referenced Application. Further, as noted above, Applicants request that the Application be amended as shown in the attached amendment papers to reflect the reference to the earlier filed Application.

Surcharge Fee

Applicants have already paid the surcharge fee under CFR § 1.17(t) with the Petition filed on September 24, 2004. Accordingly, Applicants have not enclosed any payment with this petition. However, the Commissioner is authorized to charge our Deposit Account No. 22-0259 for any additional fees required or to credit any overpayments.

Respectfully submitted,

By: Robert S. Beiser

Robert S. Beiser
Reg. No. 28,687

Date: February 23, 2005

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EXHIBIT I

RECLOSABLE FASTENER PROFILE SEAL AND METHOD OF FORMING A FASTENER PROFILE ASSEMBLY

BACKGROUND OF THE INVENTION

The invention relates generally to reclosable fasteners and a method of forming a reclosable fastener profile assembly which allows for fast, automated production and accurate seal registration. In particular, the invention relates to a seal arrangement for a reclosable zipper profile strip which is created through the application of heat and pressure to a male and female profile to form a 'compression molded segment' seal, and to a method of producing such a seal.

The popularity of reclosable zipper fasteners has created a demand for a large number and wide variety of reclosable bag sizes and types. It is commonly known in the art to form a reclosable bag through the addition of a zipper profile to a pair of bag walls in order to form a bag with a reclosable, airtight seal. However, improper registration may cause the seal to weaken and fail over time or become permeable to the air. In many reclosable bag applications, an airtight seal is necessary to maintain the freshness of articles placed in the bag. Further, such seals must be suitable for high-speed automated production in order to make the production of reclosable bags commercially viable.

In the case of zipper profiles, commonly known methods of construction and seal formation often cause inaccurate, commercially unacceptable seals which cannot be produced on an economically practical scale. Commonly known profile formation methods in the art require multiple sealing devices, precise machinery or extensive retooling to alter the size and type of reclosable fastener. Exemplary devices are shown and described in United States Patent Nos. 5,601,368 (Bodolay); 3,847,711 (Howard);

5,461,845 (Yeager); 5,823,933 (Yeager); 4,241,865 (Ferrell); 4,335,817 (Bahr); 4,909,017 (McMahon); and 5,024,537 (Tilman). As such, none of the devices referenced above satisfy the need for a multi-purpose reclosable zipper profile which can be accurately and economically manufactured.

Therefore, an unfulfilled need remains for a zipper profile which can be accurately manufactured at a high rate of speed and which can be adapted to a wide range of reclosable zipper bag applications.

SUMMARY OF THE INVENTION

The present invention provides a reclosable fastener profile seal and a disclosed method of forming a fastener profile assembly. In particular, the preferred embodiment of the method of forming a fastener assembly includes a first profile strip, a second profile strip and a compression molded segment seal fusing the first and second profiles together to provide a reclosable faster having fused ends which form the opening for a reclosable bag. To manufacture the assembly, the first profile strip and second profile strip are fed by at least one motorized roller from a web or roll of respective profile strips. Interlocking ribs are included on the profiles to create an airtight reclosable seal which is suitable for a wide range of applications. The first and second profile strips are engaged to form a reclosable profile assembly. After the first and second profiles are interconnected, a portion of the first and second profile are sealed together. The interconnected first profile and second profiles are advanced and staggered applications of a compression molded segment seal are applied to the end portions of each profile assembly. This allows the profile assembly to be formed at a high rate with good

accuracy. While being fused, the first and second profiles are cut to provide for individual reclosable fasteners.

In an alternative embodiment, the individual reclosable fastener profiles are not cut, thereby providing a continuous linear strip of fully formed reclosable bag profiles. In such an embodiment, the completed reclosable fasteners may be wound onto a roll for later separation and addition to bag walls.

It is a principal advantage of the invention to provide a reclosable fastener profile seal and method of forming a fastener profile assembly that can be produced quickly and precisely to form a zipper profile suitable for use in a wide range of reclosable bag applications.

It is another advantage of the invention to provide reclosable profile assembly and method of forming a reclosable fastener profile assembly which is easily adjustable to provide a reclosable fastener profile of any commercially desirous length.

It is another advantage of the present invention to provide a reclosable profile assembly and method of forming a reclosable fastener profile assembly which is readily adaptable to seal and form reclosable fasteners and profiles of various sizes and styles.

It is yet another advantage of the invention to provide reclosable profile assembly which is suitable for attachment to a wide range of bag wall sizes and types.

Various other features and advantages of the invention are set forth in the following detailed description, drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a portion of the profile assembly embodying the invention including the compression molded segment seal.

FIG. 2 is a front elevational view of a portion of the first profile and second profile prior to engagement and fusion.

FIG. 3 is a side elevational view of the first profile of FIGS. 1 and 2.

FIG. 4 is a side elevational view of the second profile of FIGS. 1 and 2.

FIG. 5 is a perspective view of the first and second profiles including the sealing apparatus that forms the compression molded segment seal and a single compression molded segment seal.

FIG. 6 is a perspective view of the first and second profiles including the compression molded segment seal formed in FIG. 5 and the formation of a second compression molded segment seal.

FIG. 7 is a front elevational view of a reclosable bag including the profile seal disclosed in Figs. 1 through 6.

FIG. 8 is a perspective view of a reclosable bag including the profile seal disclosed in Figs. 1 through 6.

FIG. 9 is a flowchart of the method of forming a reclosable fastener profile assembly disclosed in Figs. 1 through 6.

FIG. 10 is a flowchart of an alternative method of forming a reclosable fastener profile assembly also disclosed in Figs. 1 through 6.

While the specification and claims herein may refer to specific fastener or rib structures, it will be understood and fully appreciated that the principles of the present invention refer to closures generally and incorporate any compatible closure type or style. As such, before one embodiment of the invention is explained in detail, it is to be understood that the invention is not limited in its application to the details of the

construction and the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced or being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in FIGS. 1 though 4, the reclosable profile assembly 10 as disclosed in the present embodiment includes a first profile 14, a second profile 18 and a compression molded segment seal 22. The profile assembly 10 has a length which may be reduced or enlarged in accordance with the present application to accommodate any length required by a particular industry application.

The profile assembly 10 includes a first profile 14. The first profile 14 is flat, thin piece of packaging material preferably manufactured from polyethylene. As most clearly depicted in FIGS. 1, 2, 3 and 4, the first profile 14 includes a first profile surface 26 including an end 28, a first rib 30, second rib 34 and third rib 38. The first rib 30, second rib 34 and third rib 38 are in a location offset from the center of the first profile 14, thereby defining a profile adherence surface 42 between ribs 30, 34, 38 and the edge 44 of the first profile strip 14. As seen in FIGS. 1 through 4, the first rib 30, second rib 34 and third rib 38 of the first profile 14 extend the entire length of the first profile surface 26.

The second profile 18 is preferably manufactured from the same material and with the same dimensions as the first profile 14. As best depicted in FIG. 2, the second profile

18 includes a second profile surface 46 including an end 48, first rib 50, second rib 54 and third rib 58. As best depicted in FIG. 4, the first rib 30, second rib 34 and third rib 38 are located along one edge 40 of the second profile 18. As seen in FIGS. 1 through 4, the first rib 30, second rib 34 and third rib 38 of the second profile 18 extend the entire length of the second profile surface 46.

As seen in FIG. 1, the completed profile assembly 10 also includes a compression molded segment seal 22 portion. The compression molded segment seal 22 comprises the profile adherence surface 42 of the first profile surface 26 fused to the portion of the second profile surface 46 which engages the profile adherence surface 42 and a portion of the first 30, second 34 and third 38 ribs of the first profile surface 14 and the corresponding engaged portion of the first 50, second 54 and third ribs 58 of the second profile surface 46. In the embodiment depicted, the compression molded segment seal 22 portion has a thickness less than the combined thickness of the individual first profile 14 and second profile 18.

The formation of the profile assembly 10 and compression molded segment seal 22, as depicted in FIGS. 5 and 6, is accomplished by providing a continuous supply of an interconnected first profile 14 and second profile 18 where the ribs 30, 34, 38 of the first profile 14 are engaged with the ribs 50, 54, 58 of the second profile 18.

As seen in FIG. 5, the engaged first profile 14 and second profile 18 are fed or otherwise positioned in proximity to the compression molded segment sealer 62. The compression molded segment sealer 62 provides heat and pressure to the profile assembly 10 to form the compression molded segment seal 22.

As seen in FIG. 6, the engaged first profile 14 and second profile 18 are repositioned 82 with the first compression molded segment seal 22 advanced 82 past the compression molded segment sealer 62. The second compression molded segment seal 24 is formed, defining the second compression molded segment seal 24 of the completed profile assembly 70 and the first seal 22 of a second incomplete profile assembly 78. While the second compression molded segment seal 24 is being formed, the first profile 14 and second profile 18 are simultaneously cut 60 by the compression molded segment sealer 62 to define the completed profile assembly 70 and form a portion of the first compression molded segment seal 22 for a second incomplete profile 78. The area between the first compression molded segment seal 22 and second compression molded segment seal 24 defines the opening 80 of the reclosable bag profile 70 (as seen in FIG. 8). The second incomplete profile 78 depicted in FIG. 4 is advanced 82 and the process (as depicted in FIGS. 9 and 10) is repeated to form an additional completed profile assembly 70 (as shown in FIGS. 7 and 8).

As seen in FIGS. 7 and 8, a reclosable storage bag 84 is created by fusing or otherwise affixing a completed profile assembly 70 to a first bag wall 72 and second bag wall 74. The completed reclosable storage bag 84 includes a first bag wall 72, a second bag wall 74 and the reclosable fastener profile assembly 70 depicted in FIG. 6. As depicted in FIGS. 8, the reclosable fastener profile 10 and first 72 and second bag walls 74 combine to define a storage bag 84 with a reclosable opening 80.

FIGS. 9 and 10 represent graphically the method of forming a fastener profile assembly 70 disclosed herein. As seen in FIG. 9, the following steps are performed in sequence: first 82, an interconnected profile strip 10 is provided; second 84, heat and

pressure is applied by the compression molded segment sealer 62 to the interconnected profile strip 10 to form a compression molded segment seal 22; and third 86, the profile strip 10 is advanced 82. The second 84 and third 86 steps are then repeated to form additional completed profile assemblies 70.

Alternatively, as seen in FIG. 10, the steps 82, 84, 84 depicted in FIG. 9 are duplicated, however, a cutting step 88 is applied after the interconnected first 14 and second 18 profiles are fused 22 during the second step 84. The cutting step 88 cuts 60 the compression molded segment seal 22, thereby defining a second compression molded segment seal 24. The second step 82, cutting step 88 and third step 86 are then repeated sequentially to form additional individual profile assemblies 70.

In other embodiments (not shown), the reclosable profile assembly 10 may include a peel seal, a frangible seal or other means for detecting tampering. Such means may include any type of known frangible seal which, when broken, is easily detected by the user.

Various features and advantages of the invention are set forth in the following claims.

Claims

We claim:

1. A reclosable fastener profile assembly, said assembly comprising:

a continuous supply of a first profile strip including at least one rib that extends from the surface of said first strip;

a continuous supply of a second profile strip opposite said first strip said second strip including at least two ribs that extend from the surface of said second strip; and

a compression molded segment seal portion fusing said first profile strip, said second profile strip and said ribs of said first profile strip and said second profile strip.

2. The reclosable fastener profile assembly of claim 1 wherein said rib of said first strip and said ribs of said second strip may be sealingly engaged to maintain an airtight seal when so engaged.

3. The reclosable fastener profile assembly of claim 1, wherein said compression molded segment seal comprises a fused section of said first profile strip and said second profile strip formed through the application of heat and pressure.

4. The reclosable fastener profile assembly of claim 1, wherein said compression molded segment seal includes a severed portion of said first profile strip and said second profile strip thereby cutting said fastener profile and creating an individual profile fastener assembly.

5. The reclosable fastener profile assembly of claim 1, wherein said continuous supply of first profile strips, said continuous supply of second profile strips and a plurality of said compression molded segment seal create a continuous linear supply of profile fastener assemblies.

6. The reclosable fastener profile assembly of claim 1, wherein said first profile strip and said second profile strip are configured to fittingly mate together such that said first profile strip is flush with said second profile strip when said first profile strip and said second profile are engaged.

7. The reclosable fastener profile assembly of claim 1, wherein said ribs of said first and second strips have respective head portions and neck portions, wherein said head portions are arcuate in profile.

8. The reclosable fastener profile assembly of claim 1, wherein said first strip includes a first end and a second end, said second strip further including a first end and second end, wherein respective first ends and respective second ends of said first and second strips are created through application of said compression molded segment seal.

9. The reclosable fastener profile assembly of claim 1, wherein said ribs of said first and second strips have respective head portions and neck portions, and wherein said head portions are wider than said neck portions.

10. The reclosable fastener profile assembly of claim 1, wherein said second strip includes one more rib than said first strip.

11. The reclosable fastener profile assembly of claim 1, further including means for forwarding said continuous supply of first profile strip and said continuous supply of second profile strip.

12. The reclosable fastener profile assembly of claim 1, wherein said ribs of said first and second strips have respective head portions and neck portions, and wherein said heads portions are arcuate in profile.

13. A method of forming a fastener profile for use in the production of reclosable packages, said method comprising the acts of:

providing an interconnected first profile strip and second profile strip, said interconnected profiles having an end portion; and

applying heat and pressure to said end portion of said interconnected first and second profile strip thereby fusing said end of said interconnected profiles.

14. The method of forming a fastener profile of claim 13, wherein said method comprising the additional acts of:

advancing said interconnected first profile strip and second profile strip; and

applying heat and pressure to a second portion of said interconnected first and second profile strips thereby defining a length of reclosable fastener profile between said first end and said second portion, said second portion also defining the first end of a subsequent fastener profile.

15. The method of forming a fastener profile of claim 14, wherein said method comprising the additional act of:

cutting said second portion of said interconnected first and second profile strips thereby defining a single reclosable fastener profile.

16. A method of forming a continuous strip of fastener profiles for use in the production of reclosable packages, said method comprising the acts of:

providing a continuous strip of interconnected first and second profile strips, and

applying heat and pressure to a portion of said interconnected first and second profile strips at predetermined intervals, thereby fusing said portion of said profiles.

17. The method of forming a continuous strip of fastener profiles of claim 16, wherein said method comprising the additional act of:

cutting said fused portion of said continuous strip of said first and second profiles thereby defining an individual reclosable fastener profile from said continuous strip of fastener profiles.

18. A reclosable storage bag comprising:

a first bag wall;

a second bag wall;

a reclosable fastener profile assembly, said assembly comprising:

a first profile strip including at least one rib that extends from the surface of said first strip;

a second profile strip opposite said first strip said strip including at least two ribs that extend from the surface of said second strip; and

a compression molded segment seal portion fusing said first profile strip, said second profile strip and said ribs of said first profile strip and said second profile strip, wherein said first profile strip and said profile second strip are heat sealed to said first bag wall and said second bag wall, respectively.

19. The reclosable fastener profile assembly of claim 1, wherein said profile assembly further includes:

a first bag wall; and

a second bag wall where edges of said first and second bag walls are sealed together thereby defining an inner bag.

20. The reclosable storage bag of claim 18, wherein said first profile strip and said second profile strip may be sealingly engaged to maintain an airtight seal when so engaged.

21. A method of forming a reclosable storage bag, said method comprising the acts of:

providing an interconnected first profile strip and second profile strip, said interconnected profiles having an end portion;

applying heat and pressure to said end portion of said interconnected first and second profile strip thereby fusing said end of said interconnected profiles;

applying heat and pressure to a second portion of said interconnected first and second profile strip thereby fusing said second portion of said interconnected profiles;

cutting said fused portions of said continuous strip of said first and second profiles thereby defining an individual reclosable fastener profile between said fused portions of said continuous strip of interconnected fastener profiles;

sealing said individual reclosable fastener profile to a first and second bag wall, thereby defining a reclosable storage bag.

ABSTRACT

A fastener profile assembly and method of forming a fastener profile assembly is provided. The assembly includes a continuous supply of two interlocking profiles which are sealed at either end with a compression molded segment seal. The compression molded segment seal is formed through the application of heat and pressure to the interlocking profiles, thereby fusing the area and forming one end of the profile. Advancement of the profiles and application of heat and pressure to a second area forms the second end of the profile assembly. Manufacture of a fastener in such a manner allows for highly automated profile production with precise, accurate registration of the fastener profile.

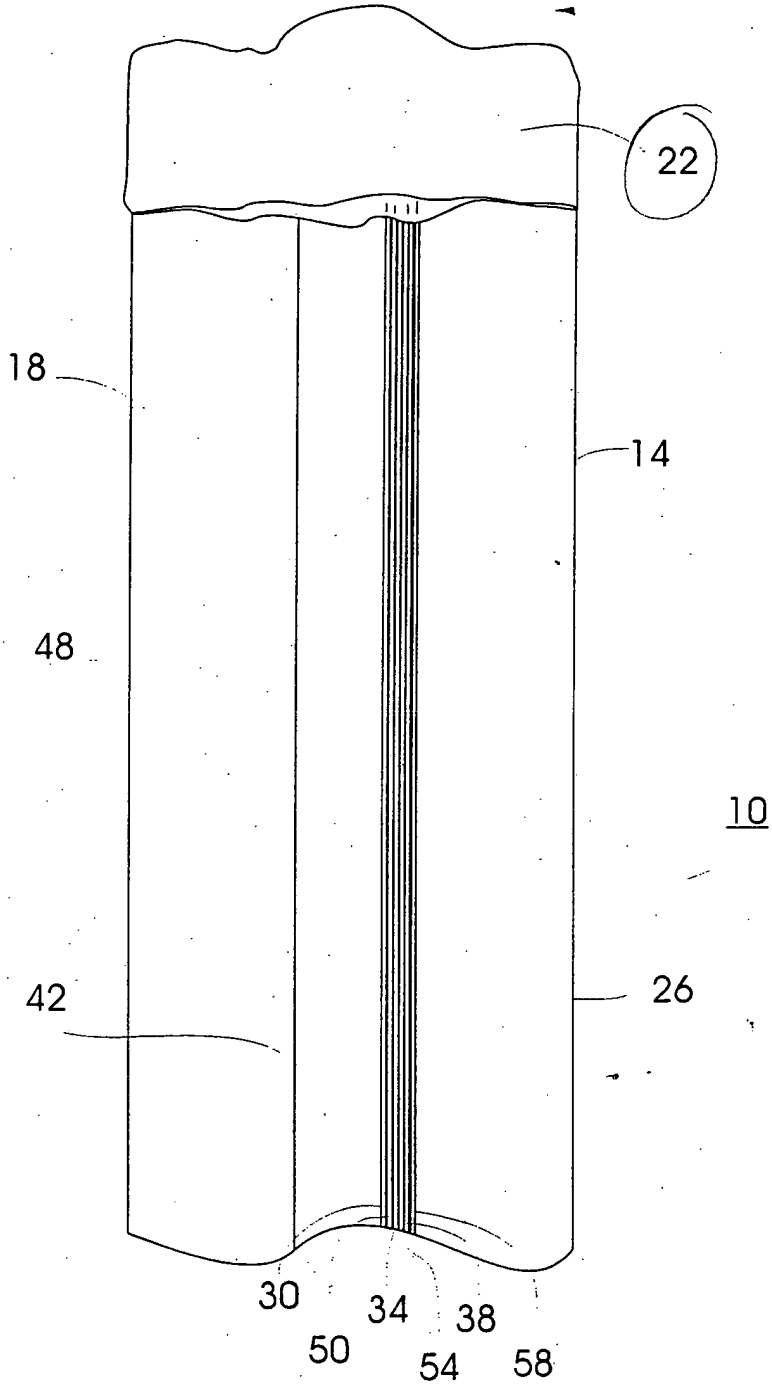

Fig. 1

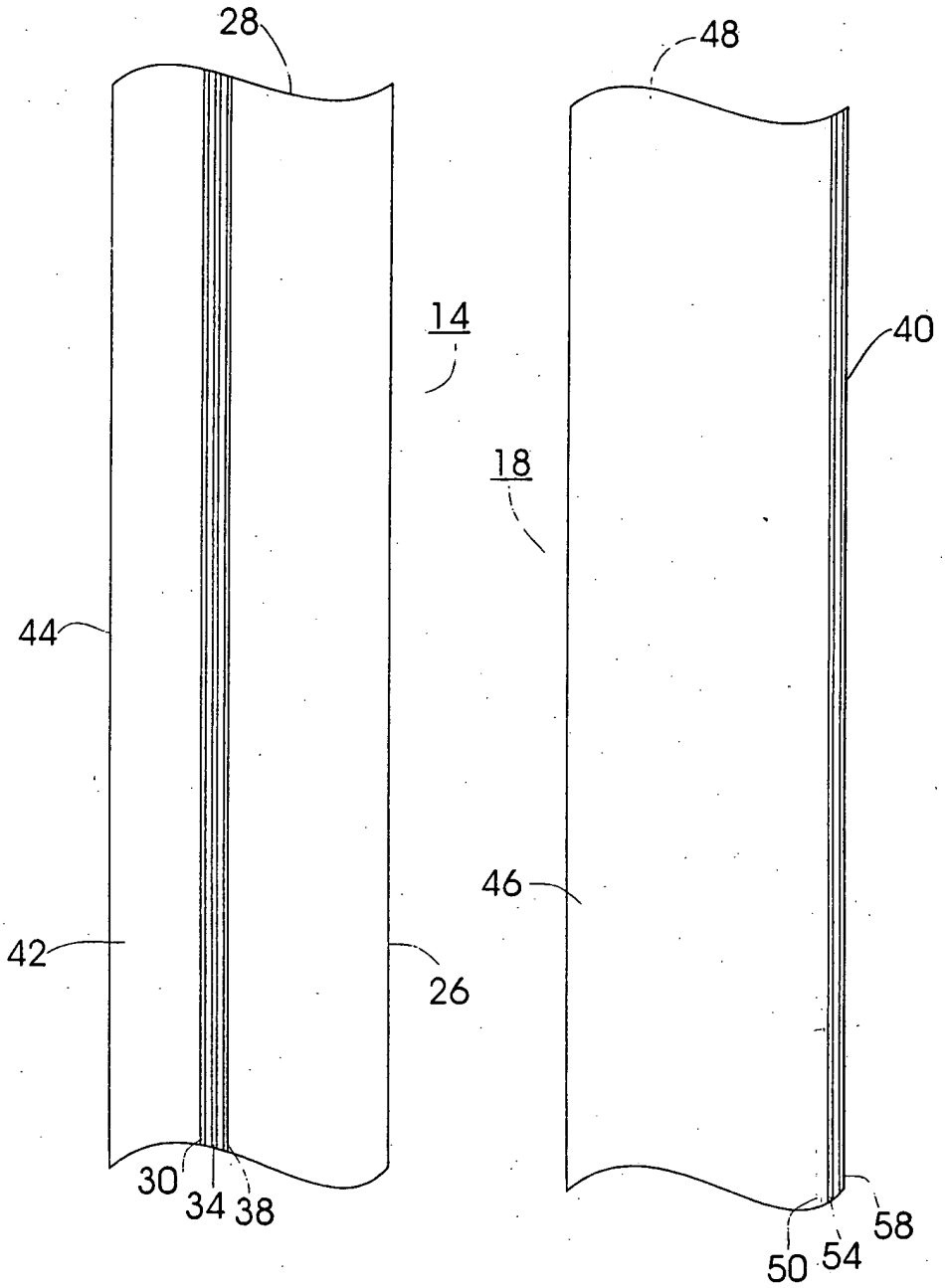

Fig. 2

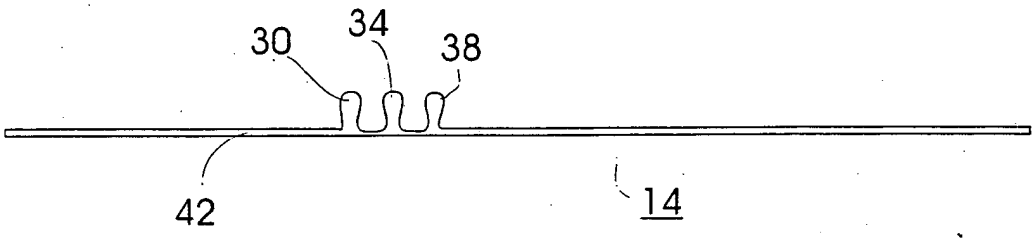

Fig. 3

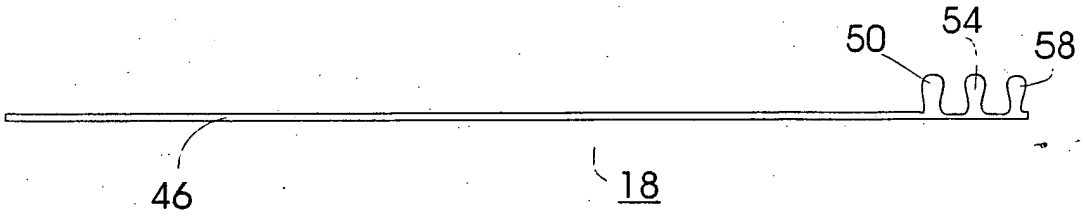

Fig. 4

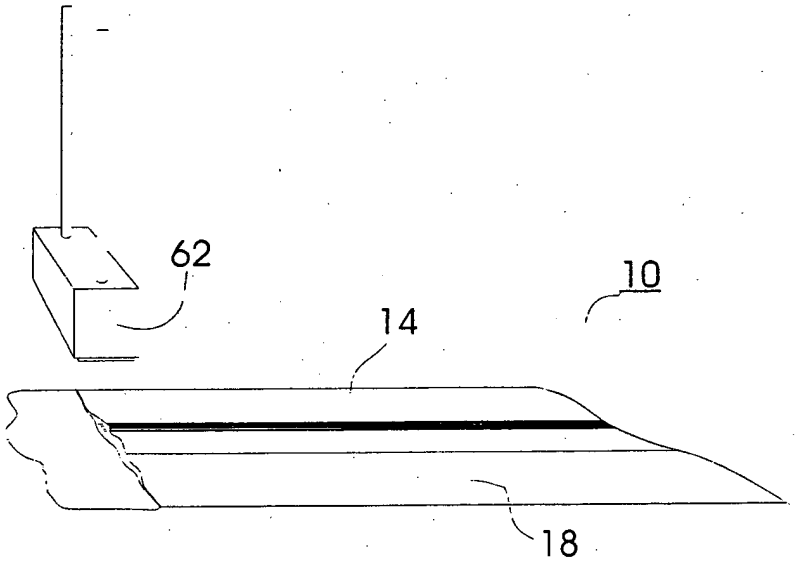

Fig. 5

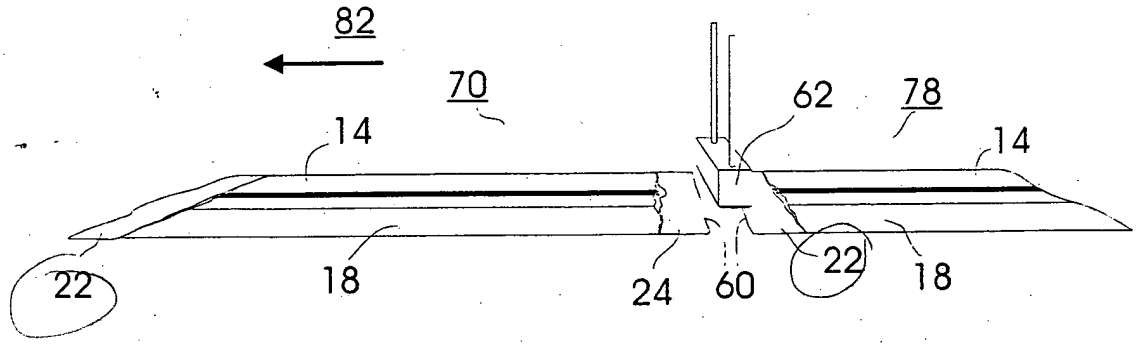

Fig. 6

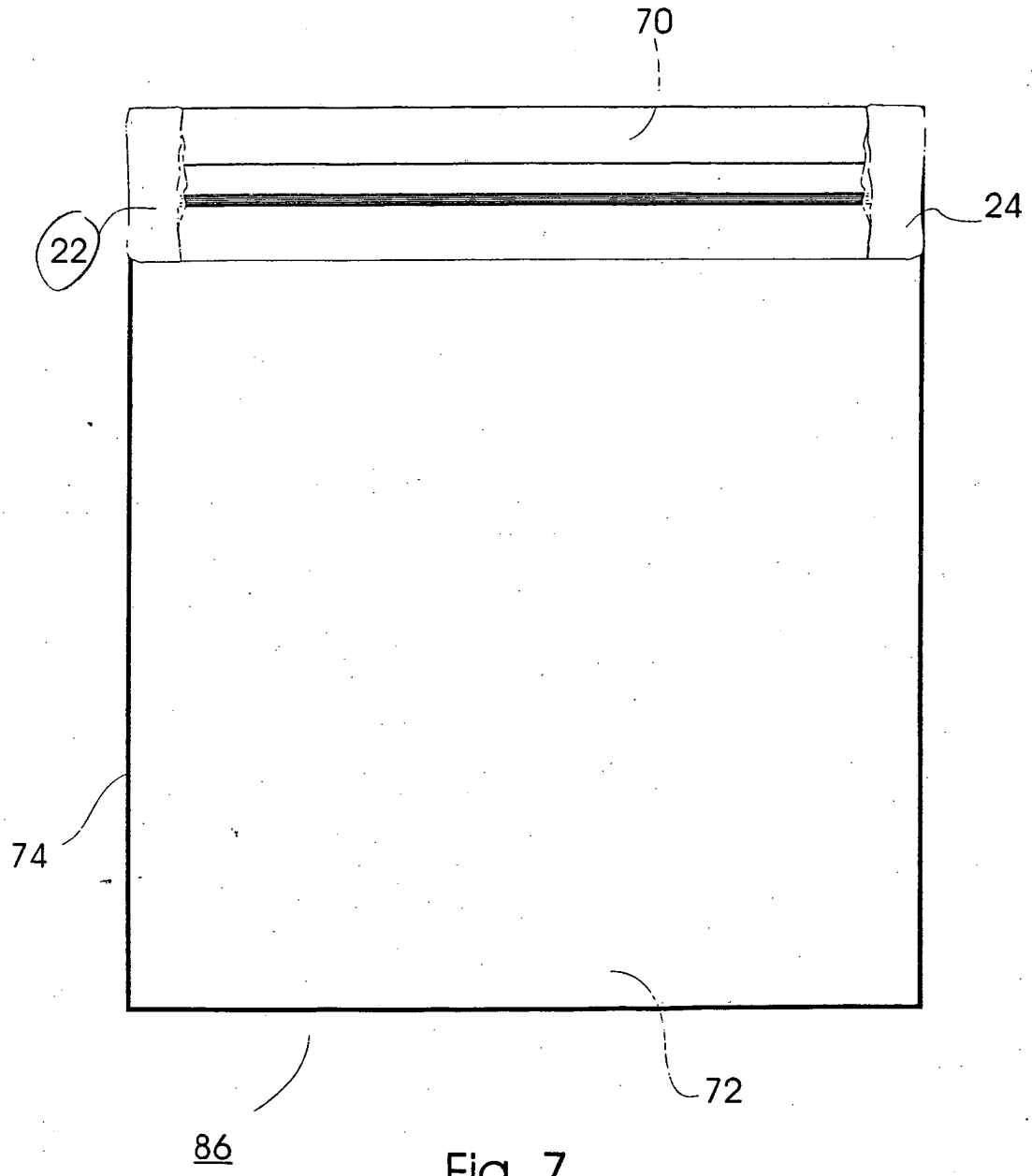

Fig. 7

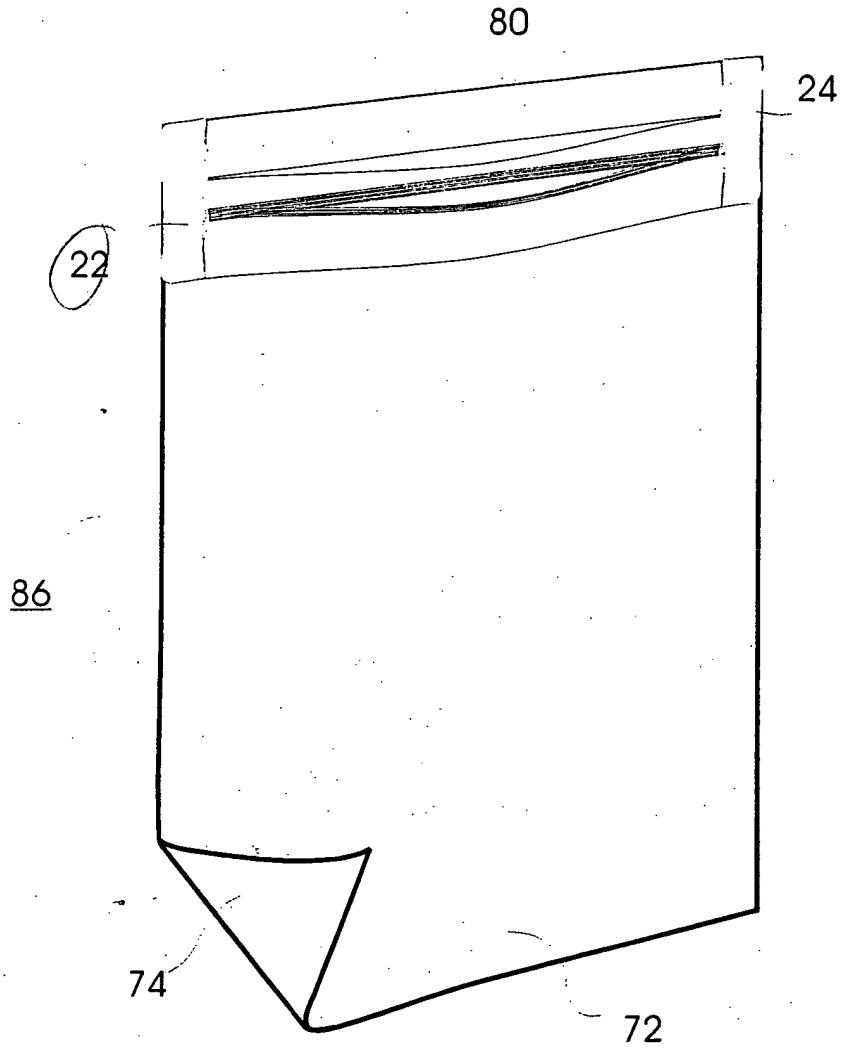

Fig. 8

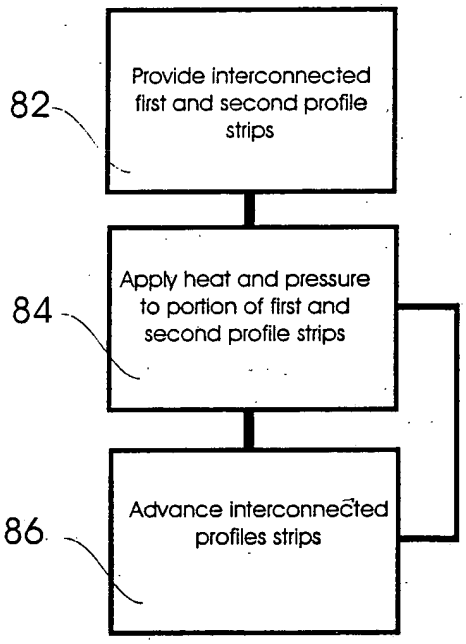
82
Provide interconnected first and second profile strips
84
Apply heat and pressure to portion of first and second profile strips
86
Advance interconnected profiles strips

Fig. 9

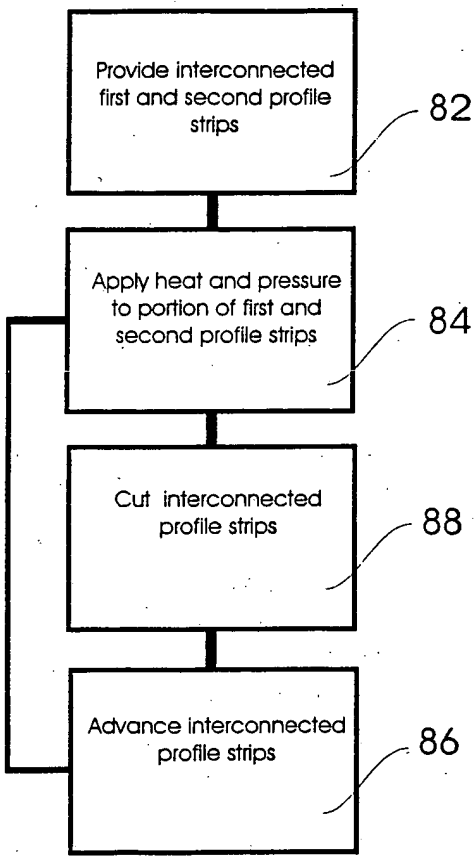
Provide interconnected first and second profile strips
82
Apply heat and pressure to portion of first and second profile strips
84
Cut interconnected profile strips
88
Advance interconnected profile strips
86

Fig. 10

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Carla Phillips

AMENDMENT

Dear Sir:

This amendment is being concurrently submitted with a renewed Petition for making priority claims under CFR §1.78(a)(2). Please amend the instant application as follows:

Amendments to the Specification begin on page 2 of this paper.

In the Specification:

Please replace the first paragraph on page 1 after the title of the invention with the following paragraph:

-- This application is based on, and claims priority from U.S. Provisional Application Serial No. 60/250,885, filed November 7, 2000, and is a continuation in part of U.S. Patent Application Serial No. 09/415,696, filed October 12, 1999. --

REMARKS

Applicants are concurrently filing this paper with a renewed Petition for making a priority claim under CFR § 1.78(a)(2), in which Applicants are petitioning to make a claim of priority for the instant application based on U.S. Patent Application Serial No. 09/415,696. Accordingly, Applicants are submitting the above amendment to the specification to reflect the claim of priority under CFR § 1.78(a)(2) in the instant application.

Applicants respectfully request entry of the above amendment. If there are any questions or comments regarding this response, the Examiner is encouraged to contact the undersigned at 312-609-7848.

Respectfully submitted,

By: Robert S. Beiser

Robert S. Beiser
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Date: February 22, 2005

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